He has also used it hypodermically. The only case which he relates is one in which the bromhydrate was successfully employed in treating incoercible vomiting in pregnancy.—*Med. Times and Gazette*, July 31, 1875.

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10. *Physological and Therapeutic Action of Nitrite of Amyl.*—SAMELSOHN protests against the prevailing idea that our knowledge of the physiological action of amyl-nitrite is sufficiently complete to serve as a basis for its remedial use. We do not understand the exact mechanism of the vascular dilatation caused by it, and we are equally ignorant of its extent and distribution. Our ignorance on those points should make us cautious.

Sander has recorded cases in which sudden collapse followed closely upon its administration. Samelsohn furnishes a detailed account of a similar instance. The patient, a somewhat anæmic young woman, suffering from symmetrical blepharospasmus, was being exhibited before the Medical Society of Cologne. It was suggested that the effect of nitrite of amyl upon the spasmodic closure of the eyelids should be tested. A narrow-necked phial, containing about fifteen grammes (225 grains), was held under one nostril, and the patient directed to take several deep inspirations. As soon as the usual change in the pulse occurred, the phial was withdrawn. The face, previously pale, was now suffused with a crimson flush, and the eyes opened widely. In an instant, however, the flush was replaced by a deadly pallor; the pulse became thread-like and slow, the skin cold and clammy, respiration difficult and gasping; consciousness was retained. These alarming symptoms passed off, but only to recur again and again; a full hour elapsed before the patient could be said to be out of danger. Even after the pulse and breathing had become normal, she still complained of feeling very cold; and this sensation lasted till the next day. The blepharospasmus disappeared for thirty-six hours, at the end of which time it returned. To what ought these symptoms be attributed? The sample of the drug was perfectly pure, and was repeatedly inhaled by other patients without producing any unusual effect. The dose was measured by its effect upon the pulse, and there was no reason to suspect that it was excessive. Sander ascribed the collapse which occurred in some of his cases to a contraction of the vessels of the pia mater, immediately consequent upon their undue dilatation, and causing cerebral anæmia. But on this hypothesis convulsive symptoms might have been expected to occur, and none such were noticed. Samelsohn prefers to explain the phenomena otherwise. As a general rule, the vascular tension is quickly restored after its depression by amyl-nitrite. In anæmic persons, however, we may suppose that the muscular walls of the vessels react less promptly, and that the elasticity of the arterial coats is impaired. Now it is well known that a sudden accumulation of blood in any part of the vascular area diminishes the supply of that fluid to the heart, placing it in the position of a pump with too little water to fill it, and thus embarrassing its action. Moreover, the girl was menstruating at the time, and her pelvic viscera were loaded with blood. That this was one of the factors concerned is rendered likely by the circumstance, that she subsequently inhaled the nitrite vapour more than once without any return of the symptoms which caused so much alarm on the first occasion.—*London Medical Record*, August 16, from *Berliner Klinische Wochenschrift*, June 14, 1875.

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11. *Physiological Action of the Preparations of Bromine.*—Dr. STEINAUER observes that the value of the bromides is attributed by some therapeutists, as Schouten and Binz, to the alkali, whilst others consider it to be due to the bromine. In order to settle this point he made a series of experiments with different preparations of bromine, in some of which the preparation used consisted of a stable compound of bromine, and was eliminated by the urine in an unchanged condition, whilst in others the compound was instable, and was decomposed in the system, so that the bromine was discharged in the free state. The results of his experiments were as follows: 1. The bromine compound exhibits an energetic action only in those chemical compounds in which there is a possibility of the bromine atom being detached. Experiments with hydrobromic acid and monobrated acetic acid, made both upon cold-blooded

and warm-blooded animals, gave constantly the same results—namely, that, in doses in which the acetic acid of the compound subcutaneously injected in an equal state of dilution produced no effect at all (as in frogs in 0.005–0.3 grm. doses, and in rabbits in doses varying from 0.05–1), the monobromated acetic acid rapidly produced a lowering effect upon the pulse and respiration, until the heart was completely arrested. Researches made with the aid of artificial respiration showed that the action on the heart was the primary one. Other researches, in which after section of the vagi and after paralysis of its intracardiac terminal nerve-fibres with nicotin, after which the action of the bromine was still apparent, showed that the action of the bromine was essentially upon the heart itself. Lastly, researches in which the experiments known as Stannius' and Munks' failed showed clearly that the action of the bromine was to paralyze both the cardiac muscle and the excito-motor cardiac nerve centre. Steinauer further observed that the bromo-acetic acid effected a diminution in the excitability of the ganglia of the spinal cord, as well as of the peripheric nervo-muscular apparatus. After the administration of the poison the animal lost its sensibility for tactile (contact and pinching) and chemical (brushing with acid) stimuli, and the same occurred after elimination of the influence of the will upon movement by division of the cord between the occiput and first vertebra, no reaction being obtainable at a period when in other animals not under the toxic influence of the drug, mechanical and electrical excitation of the nerves still caused active contraction. The reflex paralyzing influence of the bromine was not referable either to the affection of the motor nerves or to the enervated muscles, but to its action upon the spinal centres.

In regard to those preparations of bromine which were so stable that the bromine would not separate, as in monobrombenzol and sodium bromo-benzoate, no free bromine appeared in the urine; it was found in these cases that the substituted atom of bromine caused an alteration of the nutritive processes and the action of other compounds.—*The Practitioner*, Aug. 1874, from *Virchow's Archiv*, lix. p. 65, and *der Prakt. Arzt.*, No. 2, 1875.

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12. *The Physiological Action of the Chinoline and Pyridine Bases.*—A paper on this subject by Dr. J. G. McKENDRICK and Prof. DEWAR was read before the Section of Anatomy and Physiology of the British Medical Association at its recent meeting at Bristol. The following is an abstract: It is well known that quinine, cinchonine, or strychnine yield, when distilled with caustic potash, two homologous series of bases, named the pyridine and chinoline series. Bases isomeric with these may also be obtained by the destructive distillation of coal, or from Dippel's oil, got from bone. Greville Williams has pointed out that chinoline obtained from coal-tar differs in some respects from that yielded by cinchonine. In this research, the author endeavoured to ascertain (1) the physiological action of the various members of the series; (2) whether there was any difference in this respect between the members of the series obtained from cinchonine and those got from tar; and (3) whether, and if so, how, both as regards extent and character, the physiological action of these bases differed from that of the original alkaloidal bodies. The bases in both series are difficult to separate from each other; but this has been done as far as possible by repeated fractional distillation. The salt employed was the hydrochlorate. This, dissolved in water, was introduced by a fine syringe under the skin of the animal. The action of chinoline was tested on frogs, mice, rabbits, guinea-pigs, cats, dogs, and man; but as the effects were found to be similar in all of these instances, the majority of these observations were made on rabbits. The experiments with the other substances were made on rabbits and frogs. The physiological action of hydrochlorate of chinoline was first examined. Its action was then compared with that of the hydrochlorates of the chinoline series of bases distilling at higher temperatures, including such as lepidine, dispoline, tetrahiroline, etc. In the next place, the physiological action of the pyridine series was studied, beginning with pyridine itself, and passing upwards to bases obtained at still higher boiling-points, such as picoline, lutidine, etc. Lastly, the investigation was directed to the action of condensed bases, such as dipyridine, parapicoline, etc.; and the effects of these